

General, was  $75^{\circ} 59' 5'' \cdot 64$ .

As regards the positions accepted for Yärkand, Yangi-hissär and Tāsh-kurghān, the starting and terminal points of the routes represented in the south-eastern portion of the sheet, reference may be made to the notes on sheets Nos. 3 and 5. Toilebulung (D.4) where these several routes cross each other, served as a convenient point for their adjustment, the latitude for this place being derived from an astronomical observation of 1906 and the longitude by interpolation between Kāshgar-Tāsh-kurghān and Yangi-hissär-Tāsh-kurghān.

In the northern half of the sheet use was made of the values assigned to the Kosh-bēl pass (A.2), lat.  $30^{\circ} 11' 15''$  and long.  $74^{\circ} 1' 7''$ , by Russian surveys. The position determined for Ōpal-bāzār (C.2) by a latitude observation of the Forsyth Mission and by the longitude derived from interpolation on our routes between Tāsh-malik and Kāshgar was also used. For the route which R. S. Lāl Singh in 1915 followed from Ōpal to the headwaters of the Kizil-daryā (A-C.2) and thence back to Ōpal across the Ulūgh-art-dawān (B.3), a very helpful check was afforded by the fact that the position of this pass could be fixed by direct observation of several triangulated points.

The routes leading north of Kāshgar (D.1) have been adjusted to the co-ordinates shown for the Turug-art pass (Sheet 1.C.3) by the latest Russian surveys, the latitude observations of Captain Trotter being also used for the determination of certain intermediate points. In addition to the above, astronomically determined latitudes were obtained in 1900 and 1906 for a number of places, as shown in the list below.

For the interesting mountain area which comprises the Muz-tāgh-atā massif and the great glacier-clad range north of it, culminating in the Kongur-debe peak, 25,146 feet, as well as for the Pāmīr-like ground south and north of the Little Kara-kul lake (B. 4, C. 3, 4), very useful additional material was furnished by the photographic panoramas taken by me in July, 1900, with a Bridges-Lee photo-theodolite. This material was worked up in the *Map of Muz-tāgh-atā and*

<sup>1a</sup> It is of interest to note that the height as graphically determined by Major E. O. Wheeler, M. C., R. E., for Kongur-debe I peak, 25,116 ft., from

*Lake Little Kara-kul*, on the scale of 4 miles to 1 inch, prepared by the late Lieut. F. B. Tillard R.E. and published in 1903.

The same panoramas, reproduced in Plates VIII and IX of my *Mountain Panoramas from the Kwen-lun and Pamirs* (1907), have since proved specially useful also by confirming the greater height of Kongur-debe I peak (25,146) over Muz-tāgh-atā (24,388 feet),<sup>1a</sup> previously accepted as the culminating point of the whole range, and by affording direct evidence as to the approximate level of the snow-line. For this an elevation of about 17,000 feet has been accepted on that part of the range which lies south of the Gez defile, while the observations made on my crossing of the Ulūgh-art-dawān in July, 1915, indicated a somewhat lower level of perpetual snow, circ. 16,000 feet, on the northern continuation of the range.

The area represented in this sheet may be divided into three regions distinguished by well-defined physical features. The high plateau-like valleys to the west of the great meridional range, which extend from above Tagharma in the south to the wide rolling downs above Mōji, share all the chief characteristics of the Pāmīrs. Grazing of the scanty kind usual on these uplands is to be found almost everywhere at the bottoms of the open valleys. In the valleys to the east of the range, as far as and including the Gez-dara, vegetation is distinctly more limited, and this barrenness increases in a very striking manner as the traveller descends through the outer ranges to the much-eroded and utterly bare foot-hills.

North of the Gez defile, the approach to the moister climate of the T'ien-shan makes itself felt by a somewhat larger amount of grazing in the valleys and by the conifer growth to be found at their heads over fairly large patches of ground (see Bostān-terek, B. 2; Bostān-arche, C. 3). In the irrigated areas below the debouchures of the Karatāsh, Yamān-yār and Kizil rivers, the character of the ground corresponds in all essentials to that of the other oases of the Tārīm basin situated between the glacis of the mountains and the great drift-sand belts.

For a fairly detailed description of the

the Panorama taken at Kara-kul, Camp 9 (C.4), differs only by 30 feet from the elevation deduced from Rām Singh's triangulation.